

Name: _____

Test Your Skills - 03

Deadline - 2/24

Answer these exercises, in complete mathematical sentences and using mathematical notation properly. You are to work on these individually, without collaboration. You may consult your book and myself, but **not the math lab** or other resources. To earn extra credit, stop into my office hours (or make an appointment) and present your solutions. Partial credit will be given for any earnest attempt.

Exercise 1. *Evaluate*

$$\int_1^{\sqrt{3}} \left(\frac{\sqrt{1+x^2}}{x^2} \right) dx.$$

Exercise 2. *Evaluate*

$$\int \left(\sqrt{x} e^{\sqrt{x}} dx \right) dx.$$

Exercise 3. *Evaluate*

$$\int_{-\infty}^6 \left(x e^{x/3} \right) dx.$$

Exercise 4. *Find the length of the curve defined by*

$$y = \sqrt{x - x^2} + \arcsin(\sqrt{x})$$